

**TECHNICAL COOPERATION IN
DEVELOPMENT OF CLIMATE
MONITORING AND PREDICTION
SYSTEM FOR THE SOUTH ASIAN REGION**



BETWEEN

**THE NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION (NOAA)
DEPARTMENT OF COMMERCE OF THE
UNITED STATES OF AMERICA**

AND

**THE MINISTRY OF EARTH SCIENCES (MOES)
OF THE GOVERNMENT OF INDIA**



BACKGROUND

**AS A PART OF GLOBAL CLIMATE SYSTEM SUMMER
MONSOON RAINFALL OVER INDIAN
SUBCONTINENT HAS ENORMOUS, SOCIAL AND
ECONOMIC CONSEQUENCES.**

**THEREFORE, ITS PREDICTION WITH SUFFICIENT
LEAD TIME HAS TREMENDOUS AND WIDE SPREAD
SIGNIFICANCE.**

BACKGROUND



CONTINUOUS REAL TIME CLIMATE MONITORING MAY HELP IN ASSESSING THE EXTENT OF ADVERSE CLIMATE CONDITIONS IN CASE OF PREVAILING DROUGHT CONDITIONS AND TO PLAN MITIGATING ACTION.

THIS CAN BE ACHIEVED THROUGH SHARING REAL TIME DATA / PRODUCTS AND EXPERTISE THROUGH COLLABORATIVE WORKS / PROJECTS.



BACKGROUND

THE GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS (GEOSS) PROVIDES SUCH PLATFORM TO EXCHANGE DATA / PRODUCTS AND EXPERTISE BETWEEN TWO AGENCIES.

THE U.S. AND INDIA BOTH ARE CONTRIBUTORS TO THE GEOSS, A MECHANISM COULD BE EVOLVED TO EXCHANGE THE DATA, PRODUCTS AND EXPERTISE FOR MUTUAL BENEFITS



OBJECTIVES

**PROMOTE DEVELOPMENT OF HIGH QUALITY
REAL TIME CLIMATE MONITORING SYSTEM
FOR THE SOUTH ASIAN REGION,**

**PROMOTE THE USE OF CLIMATE DATA PRODUCTS
AND CLIMATE FORECASTS FOR THE BENEFIT THE
REGION.**


OBJECTIVES



SHARE RESULTS OF DEVELOPMENT OF CLIMATE DATA MONITORING SYSTEM AND DOWN SCALING METHODOLOGIES.

ENCOURAGE INTERACTION AND COORDINATION WITH OTHER COLLABORATIVE EFFORTS UNDER THE MOES-NOAA PARTNERSHIP WHERE SYNERGIES EXIST.

AREA OF COOPERATIVE ACTIVITIES



UTILIZE VARIOUS OBSERVATIONAL AND REANALYSIS DATASETS TO DEVELOP SET OF TOOLS TO MONITOR ON A REAL TIME THE CURRENT STATE OF CLIMATE OVER THE SOUTH ASIAN REGION.

THIS EFFORT MAY ALSO INVOLVE EXCHANGE OF CLIMATE DATA BETWEEN THE CLIMATE PREDICATION CENTER (CPC) AND INDIA'S METEOROLOGICAL DEPARTMENT (IMD) RESTRICTED TO PROJECTS UNDER THIS PROGRAMME.



AREA OF COOPERATIVE ACTIVITIES

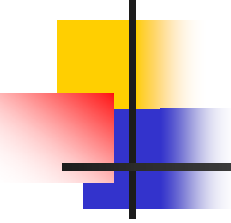
ANALYSIS OF THE SKILL OF THE OPERATIONAL PREDICTION SYSTEMS AT THE NATIONAL CENTERS FOR ENVIRONMENTAL PREDICTION, E.G., GLOBAL FORECAST SYSTEM (GFS) AND THE CLIMATE FORECAST SYSTEM (CFS) TO PROVIDE FORECAST GUIDANCE TO THE NATIONAL CLIMATE CENTRE (NCC), PUNE, WITH VARIOUS LEAD TIMES (WEEKLY, MONTHLY AND SEASONAL).

AREA OF COOPERATIVE ACTIVITIES



**DEVELOP AND ASSESS DYNAMICAL AND
EMPIRICAL PREDICTION METHODOLOGIES
(INCLUDING STATISTICAL DOWNSCALING) FOR
RAINFALL PREDICTION OVER THE SOUTH ASIAN
REGION ON DIFFERENT TEMPORAL SCALES.**

ROLE OF MOES (IMD)



PROVIDE PAST AND REAL TIME METEOROLOGICAL DATA (INCLUDING RAINFALL AND TEMPERATURE) FROM THE INDIAN SUB-CONTINENT REGION FOR THE DEVELOPMENT OF GLOBAL CLIMATE MONITORING PRODUCTS.

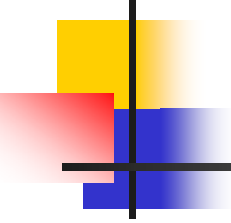
ROLE OF MOES (IMD)



DEPUTE IMD SCIENTISTS TO CPC, USA FOR THE DEVELOPMENT OF CLIMATE MONITORING DATA PRODUCTS, FORECAST PRODUCTS AND STATISTICAL DOWNSCALING METHODOLOGY.

PROVIDE ASSESSMENT OF THE SKILL OF THE CFS HINDCAST IN PREDICTING MONSOON CIRCULATION AND RAINFALL OVER INDIA.

ROLE OF NOAA



HOST AND SHARE EXPERTISE WITH VISITING INDIAN SCIENTISTS AT NOAA'S CLIMATE PREDICTION CENTER (CPC) ON THE ACQUISITION OF NCEP/CPC'S DATA PRODUCTS FOR MONSOON CLIMATE MONITORING

DEVELOPMENT OF STATISTICAL DOWNSCALING TOOLS FOR THE SOUTH ASIAN REGION



ROLE OF NOAA

SHARE WITH MOES “UNIFIED GLOBAL PRECIPITATION ANALYSES”, HISTORICAL AND REAL TIME, TO BE PRODUCED DAILY AT CPC BASED ON OBSERVED RAIN GAUGE DATA FROM AROUND THE GLOBE

PROVIDE MOES WITH RELEVANT GLOBAL ANALYSES AND FORECAST DATA FOR UP TO 15 DAYS FROM NOAA/NCEP’S GLOBAL FORECAST SYSTEM (GFS) ON A DAILY BASIS.



ROLE OF NOAA

ASSIST VISITING SCIENTIST FROM INDIA IN THE DEVELOPMENT OF WEEKLY OUTLOOKS FOR SURFACE TEMPERATURE AND RAINFALL IN REAL TIME OVER THE SOUTH ASIA REGION.

THESE BIAS CORRECTED FORECASTS WILL BE BASED ON NCEP'S GFS SYSTEM AND THE METHODOLOGY WILL BE SIMILAR TO CPC'S WEEKLY OUTLOOKS OF T & P OVER THE UNITED STATES.



ROLE OF NOAA

PROVIDE COUPLED MODEL HINDCASTS AND MONTHLY REAL TIME DATA TO MOES AS ADDITIONAL FORECAST GUIDANCE FOR INCLUSION IN THE OFFICIAL MONSOON FORECASTS ISSUED BY THE NCC.



OUTCOME OF THE PROJECT

REAL TIME DATA SUPPLIED BY THE IMD WOULD HELP IN VALIDATING DIFFERENT COMPLEX DYNAMICAL MODELS AND THUS WOULD HELP IN IMPROVING SKILLS OF MODELS.

IMD WILL HAVE AN ACCESS TO THE CLIMATE AS WELL AS REAL TIME QUALITY DATA SET / PRODUCT PERTAINING TO THE SOUTH ASIAN REGION.

BY SHARING EXPERTISE AND THE DATA SET, MONITORING CLIMATE ANOMALIES INFLUENCING MONSOON, EVOLVING BETTER TECHNIQUES FOR EXTENDED RANGE PREDICTION AND CLIMATE CHANGE STUDIES OVER THE REGION, COULD BE ACHIEVED.

A satellite-style map of India is shown in shades of brown and tan, with a white grid of latitude and longitude lines. The text 'THANK YOU' is superimposed in the center. The letters are filled with a vibrant image of pink lotus flowers and green lily pads. Each letter has a thick green outline and a thin blue inner border. The background of the map shows the Indian subcontinent and surrounding regions, with a blue ocean to the west and south.

THANK YOU

+MAITRI